

**Remarks/Arguments:**

**Introduction**

Claims 20 and 21 have been added. Support for the newly added claims maybe found in the Specification at, *inter alia*, paragraphs [0012] and [0017].

No new matter is introduced with these amendments. Entry of the amendments is respectfully requested.

**Section 102 Rejections**

Claims 1-6, 8, 10, 12, 16, 17 and 19 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Kaupp, “Environmentally Protecting Reactive Milling” (hereinafter “Kaupp”). Applicants respectfully traverse.

As summarized by the Examiner, Kaupp et al. describes an experiment in which dichlorobenzene and tetrabutyltin are milled with quartz sand at 300 rpm and 100 rpm in an argon atmosphere at a speed of 14 m/s. Due to the treatment, Kaupp concluded that mineralization had taken place as the organic compound had disappeared.

In the view of the office action, such mineralization between the organic and inorganic compound was asserted to be equated with a phase transformation for anticipation of at least claim 1.

It is clear, however, that there chemical reactions involved in Kaupp. Such chemical reactions are in direct contrast to the present invention. The present invention is directed to a phase transformation, where no chemical reaction takes place.

With regard to the chemical reactions of Kaupp, it is respectfully requested that the Examiner consider the section "Tribochemistry with Oxides" at page 5 of Kaupp. By splitting  $\text{SiO}_2$  bonds, the freshly cleaved faces are unsaturated with free  $|\text{Si}$  and  $\text{O-Si}|$  radicals and other highly reactive species representing local plasma. Kaupp specifically teaches that such plasma tends to be saturated immediately. In other words, Kaupp teaches that chemical reactions result from it techniques. The tribochemistry of Kaupp is also described as useful for mineralization of compounds such as chlorinated aromatics or tin alkyls when milling is performed with sand to chemically change dangerous environmental poisons to benign compounds, again clear indications of chemical reactions in direct contrast to the present invention.

Thus, the milling sand with organic compounds as disclosed by Kaupp results in a chemical reaction and not a phase transformation. Accordingly, Kaupp fails to disclose, teach or suggest the present invention as presently defined by independent claims 1, 16 and 19.

For the record Kaupp is also considered by the Examiner to be relevant for, *inter alia*, current claim 6 (polymorph to polymorph transformation), claim 8 (transformation from a non-pure phase to a pure phase) and 19 (phase transition in a co-crystal) due to the description of the synthesis of an azomethine imine zwitterion from proline and ninhydrin which is regarded by the Examiner as a co-crystal (a multicomponent crystal). Here Kaupp, however, is not related to a phase transformation but is rather related to a tribochemical reaction. The reaction products in this case of Kaupp are, according to the reaction scheme the zwitterion and  $\text{H}_2\text{O}$  and  $\text{CO}_2$ . Such reaction products, however, are in direct contrast to the phase transformations of the present invention because such reaction products are indicative of, *inter alia*, chemical changes.

Thus, Kaupp fails to disclose, reach or suggest the invention as presently defined by independent claims 1, 16 and 19. Reconsideration and withdrawal of the rejections of independent claims 1, 16 and 19, and all claims dependent therefrom, are respectfully requested.

Claim 18 was rejected under 35 U.S.C. §102(b) as allegedly being anticipated by US 2003/0113802 to Matzger et al. (hereinafter "Matzger"). Applicants respectfully traverse.

Matzger is considered by the office action to allegedly be relevant for the novelty of claim 18 (method for inducing phase transition by high kinetic energy milling or HKE milling) as it discloses the generation of polymorphs from drugs.

Matzger in [0030] merely describes that "polymorphism can exert profound effects on pharmaceutical processing, including, ..., milling, granulation and tableting".

It is respectfully submitted that the office action confuses HKE milling to induce phase transitions with the normal pharmaceutical processing (from powder to tablet), which may comprise milling as a technique, next to granulation etc. Moreover, Matzger specifically teaches formation of crystalline polymorphs by taking a sample of a dissolved compound and promoting crustal growth on two or more polymers. (See, Metzger, paragraph [0012]). Clearly, Matzger fails to disclose, teach or suggest the HKE method of claim 18.

Thus, Matzger fails to disclose, reach or suggest the invention as presently defined by independent claim 18. Reconsideration and withdrawal of the rejection of independent claim 18 is respectfully requested.

### **Section 103 Rejections**

Claim 7 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Kaupp in further view of Metzger. Applicants respectfully traverse.

As described above, Kaupp fails to teach or suggest the invention as presently defined by independent claim 1. Further, as described above, Metzger fails to teach or suggest the present invention, including, *inter alia*, high kinetic energy phase transformation.. Accordingly, Metzger

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fails to cure the deficiencies of Kaupp. Reconsideration and withdrawal of the rejection of claim 7 is respectfully requested.

Claims 11, 13 and 14 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Kaupp. Applicants respectfully traverse.

As described above, Kaupp fails to teach or suggest the invention as presently defined by independent claim 1. Accordingly, reconsideration and withdrawal of the rejections of claim 11, 13 and 14 are respectfully requested.

### **Summary**

Therefore, Applicants respectfully submit that independent claims 1, 16 and 18-21, and all claims dependent therefrom, are patentably distinct. This application is believed to be in condition for allowance. Favorable action thereon is therefore respectfully solicited.

Should the Examiner have any questions or comments concerning the above, the Examiner is respectfully invited to contact the undersigned attorney at the telephone number given below.

A claim fee of \$440.00 is believed to be due for the presentation of two additional independent claims. The Commissioner is hereby authorized to charge payment of the excess independent claim fee of \$440.00 or any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 08-2461. Such authorization includes authorization to charge fees for extensions of time, if any, under 37 C.F.R. § 1.17 and also should be treated as a constructive petition for an extension of time in this reply or any future reply pursuant to 37 C.F.R. § 1.136.

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